

ESTROGEN RECEPTOR ALPHA VARIANTS AND METHODS OF DETECTION THEREOF

RELATED APPLICATIONS

5 The present application claims priority to applications U.S. Serial Nos. 60/160,626, filed October 20, 1999 (Atty. Docket CL000119-PROV); 60/183,756, filed February 22, 2000 (Atty. Docket CL000258-PROV); 09/692,414, filed October 20, 2000 (Atty. Docket CL000258); 09/768,184, filed January 24, 2001 (Atty. Docket CL000258C1P); 09/804,076, filed March 13, 2001 (Atty. Docket CL000258C12); and 09/826,314, filed April 5, 2001 (Atty. Docket CL000258C13).

FIELD OF THE INVENTION

10 The present invention is in the field of disease detection and therapy. The present invention specifically provides the identification of previously unknown nucleic acid/amino acid polymorphisms within the estrogen receptor alpha gene (ESR-alpha) and the genomic sequence of this gene for use in the development of diagnostics and therapies for diseases and disorders mediated/modulated by the estrogen receptor.

BACKGROUND OF THE INVENTION

Estrogen Receptor

20 The human estrogen receptor alpha belongs to the nuclear hormone receptor family. Nuclear hormone receptors are a family of hormone-activated transcription factors that can initiate or enhance the transcription of genes containing specific hormone response elements.

25 The ER protein consists of 595 amino acids with a molecular weight of 66 kDa, 8 transcribed exons, with six different functional domains. Two of those domains are highly conserved in the primary sequence of members of the nuclear hormone receptor superfamily. One of the domains, the DNA binding domain (DBD), contains two zinc fingers that mediate receptor binding to hormone response elements in the promoters of hormone-responsive genes. In the C- terminal region, the hormone-binding domain (HBD) contains two regions of sequence
30 homology with other hormone receptors and gives hormone specificity and selectivity. The human ER-alpha gene is located in chromosome 6q.25.1.